

REMARKS

Claims 1, 23, and 32 have been amended to include the limitation that first and said second catalysts are the same or different and comprise at least one compound selected from the group consisting of alkali and alkaline earth metal hydroxides and oxides, alkali metal hydrides, alkali metal alkoxides, alkali metal amides, zinc salts, calcium salts, monoalkyltins, alkali metal hydrocarbyloxides, and mixtures thereof. Support for this amendment can be found, among other places, in Paragraphs [0029], [0031], and [0071], and original claims 2, 3, and 5. No new matter has been added through this amendment.

Claim 5 has been amended to delete the limitation that the first and second catalysts can be selected from, alkali metal hydrides, alkali metal alkoxides, alkali metal amides, zinc salts, calcium salts, monoalkyltins, alkali metal hydrocarbyloxides, and mixtures thereof. This limitation is now in claim 1. No new matter was added through this amendment.

Claims 28 and 31 have been amended to include the limitation that the first catalyst comprise at least one compound selected from the group consisting of alkali and alkaline earth metal hydroxides and oxides, alkali metal hydrides, alkali metal alkoxides, alkali metal amides, zinc salts, calcium salts, monoalkyltins, alkali metal hydrocarbyloxides, and mixtures thereof.

Claims 38 and 69 have been amended to include the limitation that the catalyst comprises at least one compound selected from the group consisting of alkali and alkaline earth metal hydroxides and oxides, alkali metal hydrides, alkali metal alkoxides, alkali metal amides, zinc salts, calcium salts, monoalkyltins, alkali metal hydrocarbyloxides, and mixtures thereof. Support for this amendment can be found, among other places, in Paragraphs [0029], [0031], and [0071], and original claims 2, 3, and 5. No new matter has been added through this amendment.

Claims 21 and 33 have been amended to delete the word comprises as it modified the promoter. Instead, the claim now recites that the promoter is at least one compound selected from... No new matter has been added through this amendment.

FIRST REJECTION UNDER 35 U.S.C 112

Claims 1-4 and 7-37 have been rejected under 35 U.S.C 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

EXAMINER'S POSITION

It is the Examiner's position that the use of the limitations "first catalyst" and "second catalyst" in the claims of the present invention does not reasonably describe the present invention. In particular, the Examiner takes the position that using these limitations would necessitate one having ordinary skill in the art to undergo undue experimentation to determine what first and second catalysts are useful in the present invention.

APPLICANT'S POSITION

Through the present communication, Claims 1, 23, 28, 31 and 32 have been amended to include the limitation that first and said second catalyst comprise at least one compound selected from the group consisting of alkali and alkaline earth metal hydroxides and oxides, alkali metal hydrides, alkali metal alkoxides, alkali metal amides, zinc salts, calcium salts, monoalkyltins, alkali metal hydrocarboxides, and mixtures thereof.

Applicants take the position that this amendment provides one skilled in the art with sufficient teachings such that undue experimentation would not be necessary to select the first and second catalysts.

The Examiner is requested to reconsider and withdraw this rejection.

SECOND REJECTION UNDER 35 U.S.C. 112

Claims 38-49 have been rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

EXAMINER'S POSITION

It is the Examiner's position that the use of "catalyst" in claim 38 of the present invention does not reasonably describe the present invention. In particular, the Examiner takes the position that using this limitation would necessitate one having ordinary skill in the art to undergo undue experimentation to determine what catalysts are useful in the present invention.

APPLICANT'S POSITION

Through the present communication, Claim 38 has been amended to include the limitation that the catalyst comprises at least one compound selected from the group consisting of alkali and alkaline earth metal hydroxides and oxides, alkali metal hydrides, alkali metal alkoxides, alkali metal amides, zinc salts, calcium salts, monoalkyltins, alkali metal hydrocarboxides, and mixtures thereof.

Applicants take the position that this amendment provides one skilled in the art with sufficient teachings such that undue experimentation would not be necessary to select the first and second catalysts.

The Examiner is requested to reconsider and withdraw this rejection.

THIRD REJECTION UNDER 35 U.S.C. 112

Claims 1-4, 7-37, and 43-49 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

EXAMINER'S POSITION

It is the Examiner's position that the use the terms "first catalyst" and "second catalyst" in claims 1, 23, 28, 31-32, and 36 of the present invention are vague and indefinite. In particular, the Examiner takes the position that the claim does not elaborate which is the first catalyst and which is the second catalyst.

The Examiner also takes the position that the use of the term "comprises" in claims 21, 33-34, and 49 is vague and indefinite. In particular, the Examiner takes the position that this term should be used to describe the mixture instead of the compound.

APPLICANT'S POSITION

As to the Examiner's position regarding the use the terms "first catalyst" and "second catalyst" in claims 1, 23, 28, 31-32, and 36 of the present invention, applicant is unclear as to the rejection. Applicants take the position that the use of "first" and "second" to modify the word "catalyst" provides sufficient description to one having ordinary skill in the art which catalyst is the first and which catalyst is the second. Further, applicants take the position that the inclusion of the limitation that the first and said second catalyst are the same or different (claims 1, 23, and 36) and comprise at least one compound selected from the group consisting of alkali and alkaline earth metal hydroxides and oxides, alkali metal hydrides, alkali metal alkoxides, alkali metal amides, zinc salts, calcium salts, monoalkyltins, alkali metal hydrocarbyloxides, and mixtures thereof provides sufficient description of the first and second catalysts and their differences or likenesses.

With regards to the rejection concerning the use of "comprising" in reference to the promoter, applicants have amended claims 21 and 33 by replacing comprising with the word "is".

With regards to the rejection concerning the use of comprising in reference to the aqueous acid, applicants take the position that the use of comprising in this instance is correct. Since the acid used is an aqueous acid, it inherently contains additional components

other than the acidic component, e.g. water. Thus, to say that the aqueous acid is sulfuric acid, etc. is incorrect.

The Examiner is requested to reconsider and withdraw these rejections.

REJECTION UNDER 35 U.S.C. 103

Claims 1-49 and 69 have been rejected under 35 U.S.C. 103(a) as being obvious in light of United States Patent Number 4,228,297, Haeberli et al. ("Haeberli") in view of Grant et al. ("Grant") (Chemical Dictionary, 1990, p.11-12).

EXAMINER'S POSITION

The Examiner takes the position that Haeberli discloses a process for producing hydroxyalkylphenyl derivatives by adding methyl acrylate, in the presence of an alkaline catalyst, to the alkyl substituted phenolic compound, and adding to the resultant reaction mixture a suitable alcohol in the presence of a second catalyst. The Examiner notes that the present invention differs from Haeberli in that the claimed process uses phosphoric acid in the neutralization step instead of acetic acid. Thus, the Examiner has cited Grant to provide support that phosphoric acid can be used as a substitute for acetic acid in the teachings of Haeberli.

APPLICANTS' POSITION

It is applicants' position that one having ordinary skill in the art and knowledge of Haeberli and Grant at the time the invention was made would not have found it obvious to arrive at the presently claimed invention.

With regards to claims 28 and 31, these claims include limitations such that the first and second catalysts are the same. This is neither suggested nor taught by Haeberli.

With regards to claim 69, the invention embodied in this claim utilizes a single catalyst to form a hindered phenolic alkyl ester. This is neither suggested nor taught in Haeberli. Further, claim 69 utilizes the transitional phrase "consisting essentially of", and applicants submit that the addition of ethyl alcohol as taught in Haeberli, see col. 10, lines 50-51, would materially alter the invention embodied in claim 69.

With regards, to claims 1-49 and 69, the examiner has relied on the teachings of Grant to provide support to Haeberli to utilize phosphoric acid. There is neither motivation nor suggestion in Haeberli to utilize an acid other than acetic acid. To this end, the teachings of Haeberli are silent regarding acids other than acetic acid. Further, all Example used in Haeberli, the only place where any disclosure concerning the use of an acid appears, even the claims are devoid of the mention of the use of acids, teach the use of acetic acid. Even though different products are produced from different reactants, the same acid was used in

each example, glacial acetic acid. Thus, there is neither motivation, teaching, nor suggestion in Haeberli that any other acid would be suitable for use therein.

Applicants also take the position that the Examiner's combination of Grant and Haeberli is improper. The Examiner has simply stated that since Grant teaches that phosphoric acid is a well-known acid, one having ordinary skill in the art would wish to use such an acid in Haeberli. Applicants respectfully disagree. There are many well-known acids such as, for example, hydrofluoric acid, hydrofluosilicic acid, etc. taught by Grant. It appears that the examiner is suggesting that any "well-known" acid can be used interchangeably with another acid in all applications absent teaching that such an acid would perform the desired function in that application. Applicants respectfully submit that this line of reasoning is faulty because not all acids perform the same function in all applications. For example, in the case of an alkylation unit operation utilizing sulfuric acid, it appears that the Examiner would suggest that acetic acid could be used in that process because it is a well-known acid. To the contrary, one could not achieve the same results using acetic acid as using sulfuric acid.

While the examiner contends that one could simply substitute the teachings from Grant (that phosphoric acid is a well-known acid) for the acetic acid teachings of Haeberli, applicants respectfully submit that one would still not arrive at the instant invention. Haeberli is conveniently silent as the meaning of "acidifying", Hackh's Chemical Dictionary, Fourth Edition, page 11, provides a definition that "acidify" simply means to add an acid until the pH of a solution falls below 7. Thus, applicants submit that the acetic acid is being added to the reaction mass of Haeberli merely to lower the pH, and there is no suggestion that the acid is added to neutralize the catalyst residues. As noted in applicants' previous office action response, acidifying the reaction mass with glacial acetic acid does not form a precipitated salt. Instead a solution results (see col. 10, lines 51-52 which clearly state "the resultant solution was clarified"), which must be clarified so the product can crystallize and be isolated on a Buchner funnel, see Haeberli col. 10, lines 49-62 and col. 11, line 64 – col. 12, line 16. One having ordinary skill in the art would easily draw a distinction between a solution and something containing precipitated salts.

Again, acidifying the reaction mixture with glacial acetic acid does not form a precipitated salt. Instead, a melt results, which is dissolved in ethyl alcohol (see Haeberli, col. 10, line 50, and col. 11, lines 65-66) to form a solution (see col. 10, lines 51-52), which must be clarified so the reaction product can crystallize and then be isolated on a Buchner

funnel. The present invention differs in that it forms a precipitated salt of the catalyst that is separated from the hindered phenolic alkyl ester compound.

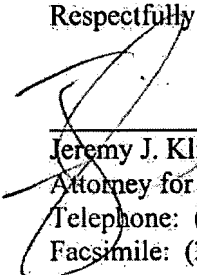
Also, the instant invention employs aqueous phosphoric acid or an aqueous acid. To the contrary, Haeberli utilizes glacial acetic acid to acidify the reaction mass. As is known in the art, "glacial" is often used to refer to acids such as acetic acid that are essentially pure acids, i.e. free of any water. Thus, if one were to utilize the teaching of Grant with Haeberli, which applicant does not concede is a proper combination as noted above, one would use glacial phosphoric acid, not aqueous phosphoric acid, as is presently taught. There is no suggestion or teaching in Haeberli that anything other than essentially pure (glacial) acids would work in Haeberli. One having ordinary skill in the art would not be led to substitute an aqueous acid for a pure acid; one having ordinary skill in the art can appreciate the performance differences between an aqueous acid and glacial acid.

The examiner is requested to reconsider and withdraw this rejection.

Based on the preceding arguments and amendments, the Examiner is requested to reconsider and withdraw all rejections and pass this application to allowance. The Examiner is encouraged to contact applicants' attorney should the Examiner wish to discuss this application further.

Respectfully submitted:

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